

REMARKS/ARGUMENTS

Reconsideration of this application is respectfully requested.

In response to the objection to claim 12 under 37 C.F.R. §1.75(c), claim 12 has been amended so as to clearly further limit the subject matter of a previous claim.

In response to the rejection of claims 1-16 under 35 U.S.C. §112, second paragraph, claims 4, 9 and 14 have been amended so as to obviate the stated objection. With respect to claim 10, the “state of mind of an entity” is believed to be clear in view of the description in the specification, for example, at page 61, line 18 to page 62, line 13 which describes, in a preferred embodiment, the stress levels of a user. With respect to claim 16, it is very clear that this claim is a dependent claim (now dependent from new method claim 17 so as to eliminate any possible ambiguity in this regard).

Accordingly, all outstanding formal issues are now believed to have been resolved in the applicant’s favor.

The rejection of claims 1-16 under 35 U.S.C. §103 as allegedly being made “obvious” based on Harrison ‘482 in view of Williams ‘982 is respectfully traversed.

As will now be explained in some exemplary detail, neither of the cited references nor any possible combination thereof (even if considered *arguendo* to be combinable) offers any teaching or suggestion of the applicant’s claimed invention.

The present invention relates to apparatus and method for controlling communication loads from a computer system on a user. In particular, as described in preferred embodiments on pages 9 to 18, a co-ordinator is provided to schedule tasks for a user and, more importantly, control the presentation of executed task results/information to the user in a manner that avoids

communication overload. As described on page 14, lines 18 to 22, the execution of the request to supply information to the user is scheduled during a free time in the user's diary, thereby avoiding overloading a user with information from several agents simultaneously.

In the example on page 15, line 1 to page 16, line 18, a user makes an entry into the diary assistant for a lunch booking and meeting. The diary agent 211 sends a message, represented as a new information task 311 describing the lunch booking and meeting, to the co-ordinator 304. The information task 311 is translated into a goal 427, and the appropriate plan 429 is retrieved from the plan library 323. A typical plan 429 for such a scenario may include a yellow pages search for a restaurant, fining the web page of the person arranged to have lunch with the user, and reminding the user of the lunch appointment. The scheduling means then specifies corresponding executable tasks, which may be passed to appropriate agents to process, for example, web page search to web agent 201. When the agents have finished, they have to notify the user of the results. The results are routed via the co-ordinator 305 in order to determine whether the user is able to accept interrupts. The co-ordinator 305 accesses the world model, which includes details of all the user's current and future tasks and associated interruption status, in order to determine the next available time slot in which to interrupt the user with the results. Consequently, the user will only be presented with results of a task when he is free (of interruption) to do so.

Claim 1 specifically defines "generating means for generating an executable task for communicating the received information to the human user". In the embodiment described above, the executable task is supplying the results of the web search and reminding the user of the lunch appointment.

Claim 1 also defines “scheduling means for: a) receiving a user workload input representative of user workload identifying the user’s current and future activities; and b) scheduling an execution time for said executable task so as to avoid the user’s current and future activities identified by the user workload input”. In the embodiment described above, the “user workload” is the user’s world model or diary, “execution time...so as to avoid the user’s current and future activities” is a time slot where the interruption status of the user is not set to “do not interrupt”.

First, Harrison is not analogous to the present application because, for example, the present invention defined by amended claim 1 relates to an apparatus for “controlling the communication load placed on a human user by a computer system”. In contrast, Harrison merely describes balancing processing loads between processing nodes in a modular array processor architecture. Moreover, Harrison fails to disclose “information management systems are agents such as web agents, diary assistants, web assistants and telephone directory assistants, that are able to communicate with the user.

Harrison also fails to disclose the feature of “one or more inputs representative of one or more tasks to be performed by the information management system” defined in amended claim 1. In the embodiments of the present invention, an “input” may be booking a restaurant, whereas a “task” may be searching for the telephone number of a restaurant or the searching for the web site for a restaurant by a telephone or web agent. In Harrison, there is only discussion of a single type of task, namely one that can be run on a processing node.

As acknowledged by the Examiner, Harrison critically fails to disclose features even of original claim 1. Amended claim 1 now clarifies those features and further defines additional features relating to the scheduling means. Harrison also fails to disclose these additional features of the scheduling means for “a) receiving a user workload input representative of user workload identifying the user’s current and future activities; and b) scheduling an execution time for said executable task so as to avoid the user’s current and future activities identified by the user workload input”. There is no disclosure in Williams of how the tasks are created or how the execution times (402) are scheduled. The scheduler in Harrison merely attempts to schedule the execution of the task in line with a predetermined execution time as far as is possible, without attempting to avoid “the user’s current and future activities” as defined in amended claim 1.

Williams relates to a method and system for managing concurrently executing processes in a process scheduler. Williams does not relate to controlling the communication load “placed upon a human user by a computer system” as defined in amended claim 1.

Williams also fails to disclose a “computer system comprising a plurality of information management systems...operable to assist and communicate with the user” as defined in claim 1. Williams describes a single file directory system holding a plurality of request files which are handled in sequence by a solicitor 104 and a service manager 102. Tasks are transferred from a priority ordered queue 108 to an in-service queue 110. The in-service queue 110 can hold several tasks at any given time and each task in the in-service queue are executed simultaneously (see column 2, line 58 to column 3, line 2).

As discussed above, one aim of the present invention is to avoid overloading a user with information relating to executable tasks from multiple agents, which is achieved in part by the

feature in claim 1 of scheduling an execution time “so as to avoid the user’s current and future activities identified by the user workload input”. Such a feature is not taught or suggested in Williams. In contrast, Williams describes a system for maximizing the number of concurrent processes that may be executed by a processor, rather than avoiding coincident execution items as defined in claim 1. The Examiner’s attention is directed towards Figure 7 and the corresponding text in the description, Williams clearly describes a process wherein the in-service queue 750 is capable of executing a number of “concurrent processes” at any given time (see column 6, lines 30 to 33 and lines 39 to 42).

Both Harrison and Williams fail to disclose common features from amended claim 1, in particular those relating to the scheduling means defined in amended claim 1. therefore, even assuming, *arguendo* that a person of ordinary skill in the art would combine Williams with Harrison, he would not arrive at all the features defined in amended claim 1.

The dependent claims add yet further patentable distinction to the claimed invention. Since such claims are, by definition, already allowable anyway because they depend from allowable claims, it is not necessary to detail all of the numerous deficiencies of the cited references with respect to each and every dependent claim. However, some examples of such additional deficiencies are noted below.

With reference to the specific objection directed towards dependent claim 5, Harrison merely describes the handling of I/O interrupts on a processor, which does not read onto “specify[ing] interruption status...to the human user” as defined claim 5. In embodiments of the present invention, an interruption status is described in relation to the ability of a user to accept

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communications, for example "will not accept interruptions" (see page 13, lines 18 to 26).

Therefore, it is clear that Harrison fails to disclose the features of claim 5.

With reference to the specific objection directed towards claim 9, Williams does not specifically teach or even suggest any one of the assistants defined therein. Harrison operates at the processor level and does not specify the type of processor.

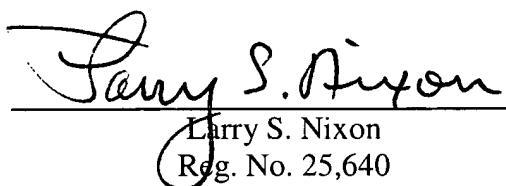
Attention is directed to new method claims 17-19. New independent method claim 17 is analogous to apparatus claim 1 and is believed to be allowable for reasons analogous to those already discussed above. Dependent claims 18, 19 and, now with the above amendment, 16 are also allowable because they add yet further distinctions to independent claim 17.

Accordingly, this entire application is now believed to be in allowable condition and a formal Notice to that effect is respectfully solicited.

Respectfully submitted,

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